

# The Economics of Private Placements: Middle-Market Corporate Finance, Life Insurance Companies, and a Credit Crunch

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This article examines the private placement market for corporate debt and the recent credit crunch in that market. Neither the private placement market nor the crunch have received much attention from economists, but both are important. The private market is a significant source of funding for medium-sized companies. Starting in the early 1990s, the credit crunch in the private market cut off most below-investment-grade companies from a traditional source of long-term funds; it is an example of a mechanism of credit market disruption that economists have yet to focus on.

The article first examines the structure of the private placement market, including contract terms and who the typical borrowers and lenders are. The private placement market is an information-intensive market that shares much with the more familiar bank loan market: borrowers and lenders typically negotiate lending terms, lenders evaluate and monitor borrowers' credit risk, covenants are used to control risk, and borrowers generally lack access to public debt markets because they are too information-problematic for public market investors to evaluate.<sup>1</sup> As in the bank loan market, a key activity of lenders in the private placement market is the gathering and production of information about borrowers' credit quality. However, there are also significant differences from the bank loan market: debt instruments in the private placement market are securities rather than loans, maturities of private placements are much longer than those of bank loans, interest rates are fixed rather than floating, and the principal financial intermediaries investing in private placements are life insurance companies, not banks.

The article also analyzes the credit crunch that occurred in the below-investment-grade sector of the private placement market in the early 1990s. Credit crunches have long been an interesting and controversial topic, because producing compelling evidence that a crunch occurred is often difficult and because economists have proposed a variety of mechanisms that can cause crunches. For the recent credit crunch in the private placement market, relatively extensive evidence is available. In addition, the causes of the crunch appear to differ from the standard ones proposed in the academic literature. Another interesting aspect of this credit crunch is that it apparently continues to this day, long after its initial causes—financial problems at life insurance companies and a policyholder focus on the industry's below-investment-grade bond investments—appear to

have waned. I examine some possible reasons for the persistence of the crunch.

### The structure of the private placement market

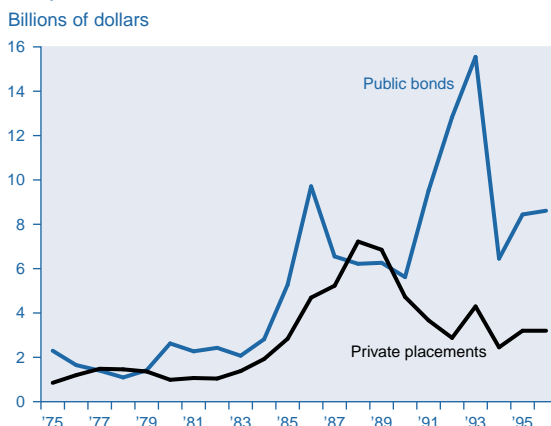
A private placement is a debt security issued by a firm that is exempt from registration with the Securities and Exchange Commission (SEC). By law, private placements must be sold only to a limited number of sophisticated investors (typically life insurance companies). Both initial offerings and secondary transactions of private placements are restricted in this fashion.

This article focuses on the traditional market for privately placed debt, which is distinct from the so-called Rule 144A market for private debt securities. Rule 144A, adopted by the SEC in 1990, provides more formal exemption from registration for secondary transactions in private placements. It has essentially evolved into a quasi-public market that is quite distinct from the traditional market. Most borrowers in the Rule 144A market are less information-problematic than traditional market borrowers. Lenders include traditional public bond buyers such as mutual funds and pension funds as well as life insurers; securities very often have registration rights attached to them and are formally underwritten (as in the public bond market), as opposed to sold on a “best-efforts” basis by agents (as in the traditional private market). There is generally substantially less gathering and production of information on borrower credit quality by lenders in the Rule 144A market.<sup>2</sup>

Private placements are a significant source of funds for U.S. corporations. During 1994–96, gross issuance of private placements by nonfinancial corporations was almost 40 percent of that in the public market. For a few years in the late 1980s, private issuance actually exceeded public issuance (*Figure 1*). The surge in public issuance in periods of falling interest rates (for example, in the mid-1980s and early 1990s)—which primarily reflects refinancing activity—has not been matched by private issuance because most private bonds carry punitive prepayment penalties, making refinancing unattractive.<sup>3</sup> The market size in terms of the outstanding stock of bonds also suggests that the private placement market is an important one. At year-end 1996, the nonfinancial corporate sector had about \$450 billion of private placements outstanding, roughly 70 percent of the amount of bank loans (\$640 billion) and almost 50 percent of the amount of public bonds (\$950 billion) outstanding.<sup>4</sup>

Table 1 sets out some of the differences in

**Figure 1**  
Gross Issuance of Publicly Offered and Privately Placed Bonds by Nonfinancial Corporations, 1975–96



SOURCE: Federal Reserve Board.

contract terms, borrowers, and lenders between the private placement market and the two other major debt markets—the public bond and bank loan markets. Many of these differences are consistent with the notion that, for many firms, these are very distinct markets to which there is a hierarchical pattern of access. In other words, there are many firms that are too information-problematic to borrow in the public bond market—they need to take advantage of the intensive due diligence and monitoring in the private placement or bank loan market. Of these, the most information-problematic firms are probably restricted to the bank loan market, where the most intensive monitoring takes place. Thus, the private placement market is a much more information-intensive market than the public bond market but probably somewhat less information-intensive than the bank loan market.

**Contract terms and borrowers.** Contract terms differ substantially across the three debt markets listed in Table 1. On average, private placements are larger than bank loans and smaller than public bonds. Carey et al. (1993) report that in 1989 roughly 80 percent of all private placement issues ranged from \$10 million to \$100 million. In contrast, more than 80 percent of all bank loans ranged from \$10,000 to \$1 million, while more than 80 percent of all public bonds issued ranged from \$100 million to \$500 million.

Maturities of private placements are generally longer than those of bank loans but shorter than those of public bonds. Bank loans have relatively short maturities—Carey et al. (1993)

Table 1  
Credit Market Characteristics

Characteristic	Market		
	Bank loan	Private placement	Public bond
<b>Contract terms</b>			
Average loan size	Small	Medium	Large
Average maturity	Short	Long	Longest
Interest rate	Floating	Fixed	Fixed
Covenants	Many, tight	Fewer, looser	Fewest, loosest
Covenant renegotiation	Frequent	Less frequent	Rare
Collateral	Frequent	Less frequent	Rare
Liquidity of instrument	Low	Low	High
<b>Borrowers</b>			
Average borrower size	Small	Medium to large	Large
Severity of information problems posed by borrowers	High	Moderate	Low
<b>Lenders</b>			
Lenders	Intermediaries	Intermediaries	Varies
Principal lender	Banks	Life insurers	Various
Lender monitoring	Intense	Significant	Minimal

report that in 1989 roughly 80 percent of all bank loans were for less than one year. Private placements are generally of intermediate to long term (between seven and fifteen years) maturity—more than half of all private placements issued in 1989 were within this maturity range. Finally, public bonds are typically long term—roughly 70 percent of all public bonds issued in 1989 were longer than ten years in maturity.

The use of covenants also varies substantially across these three debt markets. Covenants are a mechanism lenders use to control risk. Affirmative covenants require a borrower to meet certain standards of behavior. They include requirements that the firm stay in the same business and meet its legal and contractual obligations. Affirmative covenants are common in all three debt markets. Negative covenants restrain the borrower from taking actions that would be detrimental to debtholders. They include restrictions on capital expenditures, the sale of assets, dividends, merger and acquisition activity, and the amount of additional debt the firm can take on. Finally, financial covenants restrict measurable financial variables and can stipulate minimums to be maintained on capital, interest coverage, and the ratio of assets to liabilities.

The frequency and tightness of negative and financial covenants in both the bank loan and private placement markets vary with the degree of information problems the firm poses to outsiders and its observable credit risk. “Tightness” refers to the likelihood that a particular covenant will be binding in the future.

Both private placements and bank loans for more information-problematic firms often contain many financial and negative covenants, whereas covenants are fewer and looser (that is, with minimum values further from current values) in both markets for firms that pose fewer information problems. In particular, however, bank loan agreements appear to contain more and tighter covenants than private bonds, even for borrowers with the same characteristics, while negative or financial covenants in public bonds are extremely rare.<sup>5</sup>

Since covenants limit a borrowing firm’s financial and operational flexibility, there are usually either implicit or explicit provisions for contract renegotiation, whereby the lender can examine requests for a waiver or relaxation of a covenant. Lenders that offer such provisions must of course have the ability to monitor and evaluate borrowers and the effect on their creditworthiness of relaxing particular provisions in the debt contract. The more frequent and tighter covenants in bank loans mean that covenant renegotiation is most frequent in this market. However, renegotiation is also quite frequent in private placements, while renegotiation is extremely rare in public bonds.<sup>6</sup>

These cross-market differences in contract terms are usually consistent with the notion that firms posing the greatest information problems for outside investors are generally restricted to the bank loan market, firms with less severe information problems have access to the private placement market, and only those large public firms with the fewest information problems can access the public bond market. In other words,

different debt markets specialize in providing financing to borrowers that differ in the degree of information problems they pose to investors.

Cross-market patterns of issue size are consistent with this notion. The information problems borrowers pose to lenders span a spectrum. Firm size is an important determinant of where on this spectrum a firm is because size is correlated with age and the length of a track record. Size is also related to the number of externally visible contracts the firm has, as well as to the firm's stake in its own reputation. Of course, borrower size is also highly correlated with issue size. Thus, smaller borrowers, which make smaller issues, are often less well-established and less well-known firms; consequently, they require more due diligence and loan monitoring by the lender. In fact, as Carey et al. (1993) show, borrowers in the public market are substantially larger than borrowers in the private placement market, which are in turn substantially larger than firms that are restricted to the bank loan market for raising funds.

Cross-market patterns of covenants are also consistent with the notion that each debt market serves borrowers differing in the degree of information problems posed to lenders. Information-problematic firms are subject to covenants that limit their risk-taking ability. But in order not to restrict the firms' activities too much, there must be room for renegotiating them at appropriate times. This can only occur in markets where the lenders are willing and able to renegotiate. Information-problematic firms cannot borrow in the public market because covenants are not effective there, since public lenders have little capacity for monitoring.

Differences in maturity between the bank loan and private placement markets appear related to the liability structures of the differing lenders in each market. Banks have short-term, floating-rate liabilities, which they can match with short-term, floating-rate loans. Conversely, life insurance companies have primarily long-term, fixed-rate liabilities, which are conveniently matched by private placement investments. Although banks could in principle make long-term, fixed-rate loans and execute swaps to obtain payment streams matching their floating-rate liabilities, they seldom do so. Perhaps this is because the transactions costs of such swaps are too high. An alternative explanation, however, is that the different markets serve borrowers that differ in terms of the credit evaluation and monitoring they require, and that in equilibrium the different credit analysis requirements require different maturities to be

most efficient. For example, the tighter the covenants used to control borrower behavior, the shorter the maturity of the contract needs to be to provide flexibility for the borrower.

**Lenders.** Market participants estimate that life insurers purchase between 50 and 80 percent of all private placement issues. Carey et al. (1993) provide evidence supporting estimates at the high end of this range. Foreign and commercial banks, pension funds, finance companies, investment banks, and thrifts are all minor players in the market. As mentioned above, one reason for life insurers' dominance is that they are uniquely suited to investing in private placements because the fixed-rate, intermediate- to long-term nature of the security can be easily matched with their liabilities. At year-end 1995, life insurers held about \$250 billion of private placements, representing about 14 percent of their general account assets and 37 percent of their total corporate bond holdings.<sup>7</sup> Within the life insurance industry, private placement lending is concentrated in the hands of the largest twenty insurers, which hold about 70 percent of total life insurance industry private placement holdings.<sup>8</sup>

Life insurance companies are information-intensive lenders—that is, they conduct both substantial due diligence on the borrower before making the loan and continuous monitoring after the loan is made. Thus they have large investments in risk-control technologies. Most insurers have traditionally had large staffs of credit analysts, who evaluate the credit quality of potential borrowers and monitor the health of firms to which credit has been extended. Most review each private placement in their portfolio quarterly and conduct a more formal semiannual or annual review. Violations of or requests for renegotiation of covenants generate further reviews. The costs of risk-control operations are covered by the higher risk-adjusted yield of private placements relative to public bonds, which require little or no active monitoring by securityholders.

Their large investments in credit evaluation and monitoring have traditionally led most life insurance companies to focus on more complex and lower rated credits, and the industry's expertise in investing in such bonds has largely been built up over the postwar period. For example, Shapiro (1977) notes that between 1960 and 1975, the share of insurers' annual commitments to private placements devoted to bonds rated Baa or below was roughly 60 percent, with the share going to below-investment-grade private bonds (those rated Ba or below)

Table 2

## Gross Issuance of Private Placements by Nonfinancial Corporations, 1989–95

	1989	1990	1991	1992	1993	1994	1995
Total issuance (in billions)	\$54.7	\$49.9	\$42.1	\$29.5	\$52.0	\$31.0	\$41.0
Below investment grade (BIG) (in billions)	\$6.6	\$8.1	\$3.8	\$3.2	\$3.0	\$2.0	\$1.0
BIG as percentage of total	12.1	16.2	8.9	10.8	5.8	6.4	2.4

NOTE: Excludes restructuring-related issues in excess of \$250 million, issues to finance employee stock ownership plans, and Rule 144A issues.

SOURCE: Securities Data Corp.

at roughly 20 percent. As late as 1990, insurers were still following this investment pattern: at year-end 1990 the life insurance industry held 56.8 percent of its total private bond holdings in bonds rated Baa or below, with 19.8 percent in bonds rated below investment grade. As described in the next section, however, in 1990 and 1991 the share of insurance industry commitments to below-investment-grade bonds was abruptly and sharply lowered, a phenomenon I call a “credit crunch.”

### The credit crunch

The private placement market is fundamentally an information-intensive market, with life insurance companies as the principal intermediaries. One feature all intermediaries share is their vulnerability to withdrawals of funds by liabilityholders, or runs, with consequent disruptions in the markets in which they lend. This section investigates an example of a disruption in the private placement market.<sup>9</sup>

Starting in mid-1990, issuers of below-investment-grade securities encountered a sharp contraction in the availability of credit in the private placement market. A coincident sharp rise in interest rate spreads on these securities suggests that the reduction in supply was larger than any decline in credit demand associated with the weak economy in that period. The primary mechanism for this credit crunch appears to have been asset-quality problems at life insurance companies in 1990 and 1991, which focused regulatory, stock market, media, and policyholder attention on the financial solvency of life insurers. For a variety of reasons, such attention focused on the share of below-investment-grade bonds on life insurance company balance sheets: insurers with a high share were penalized by lower stock prices, unfavorable media reports, and slower sales growth of life insurance products. Insurers thus began competing with each other not just on price

but also on the basis of the share of below-investment-grade bonds on their books. As a result, insurers stopped buying below-investment-grade bonds, precipitating a crunch in the private market for these bonds where they had previously been the dominant investors.<sup>10</sup> In other words, there was a flight to quality by life insurance companies.

This flight-to-quality mechanism differs somewhat from those proposed by economists. It is most closely related to the class of models that focuses on runs caused by liabilityholder concerns about financial intermediaries' solvency. However, unlike in these models, no actual runs occurred to trigger a flight to quality by an insurance company.

One surprising aspect of the credit crunch is its persistence. Even today, life insurers appear to be infrequent purchasers of below-investment-grade private bonds, while gross issuance remains low and spreads remain high, despite the fact that solvency concerns about life insurance companies and concerns about below-investment-grade bonds have largely been put to rest. I investigate reasons for the persistence of the crunch.

**Definition of a credit crunch.** Many definitions of the term *credit crunch* appear in the literature (see Clair and Tucker 1993 for a review). My definition is that, for a given price of credit, lenders substantially reduce the volume of credit provided to a group of borrowers whose risk is essentially unchanged. That is, a credit crunch is caused by a reduction in lenders' willingness to make risky investments—in terms of a supply-and-demand diagram, a credit crunch is a substantial leftward shift in the supply of credit, when the shift is not principally due to an increase in the riskiness of borrowers.<sup>11</sup>

Note that a supply shift alone does not imply a credit crunch, as the supply curve may shift due to an increase in the riskiness of bor-



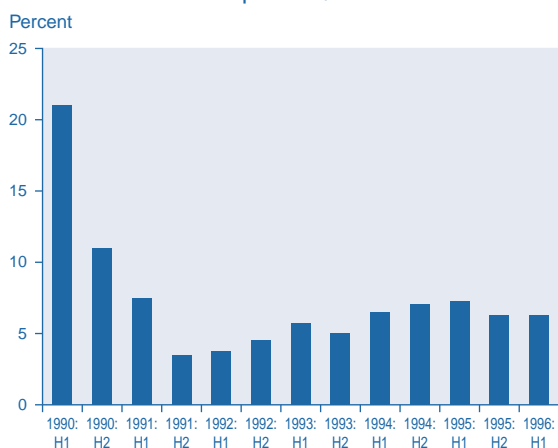
rowers. Thus my credit crunch definition does not encompass the reduction in supply that is a normal response by lenders in a recession. In a recession, borrower riskiness normally increases, and lenders demand compensation either in higher interest rates or in tighter non-price credit terms. Although borrowers might characterize such a reduction in credit as a credit crunch, such a characterization would be incorrect because the decrease in credit is a normal response of lenders to changing conditions. Cantor and Wenninger (1993) refer to this situation as a "credit slowdown."

My definition of a credit crunch differs from some, notably that of Owens and Schreft (1992), in that it does not require that the credit reduction be accomplished by nonprice rationing. The reduction may be effected entirely by an increase in the relative price of credit, as would normally occur in response to a leftward shift in the supply curve, or by some combination of price increase and nonprice rationing.

**Evidence for a credit crunch.** Events in the below-investment-grade sector of the private placement market in the early 1990s qualify as a credit crunch because gross issuance of below-investment-grade private placements declined substantially and spreads on such debt increased sharply, whereas spreads on investment-grade private debt declined. A general increase in the riskiness of borrowers due to the 1990–91 recession cannot account for these phenomena.<sup>12</sup>

Data from three sources confirm a reduction in issuance of below-investment-grade pri-

**Figure 2**  
New Commitments to Purchase  
Below-Investment-Grade Private Placements,  
As a Percentage of Total Commitments by  
Life Insurance Companies, 1990–96



SOURCE: American Council of Life Insurance.

**Table 3**

**Life Insurance Industry Below-Investment-Grade Bond Investments**  
(Percentage of bonds held that are below investment grade)

	1990	1991	1992	1993	1994	1995
Private placements	19.8	16.5	15.3	12.0	11.4	10.0
Public bonds	6.8	4.7	3.7	3.8	6.1	8.4
Total bonds	10.3	7.7	6.5	5.7	8.1	9.0

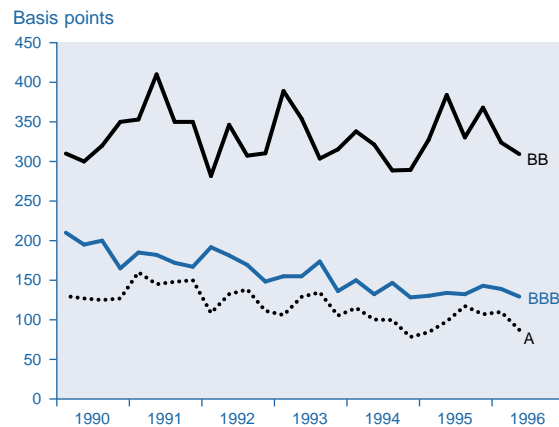
SOURCE: National Association of Insurance Commissioners.

vate placements. First, gross issuance by below-investment-grade nonfinancial corporations fell by more than 50 percent in 1991, a much steeper drop than issuance by investment-grade corporations (*Table 2*).<sup>13</sup> As a share of gross offerings, below-investment-grade issuance declined from 16 percent in 1990 to about 10 percent in 1991 and 1992, and 6 percent in 1993. Note also that the share of below-investment-grade issuance continued to fall through 1995. I will return to the persistent nature of the crunch later.

Second, according to survey data from the American Council of Life Insurers (ACLI), the share of total commitments by life insurers to below-investment-grade private placements dropped sharply in mid-1990, from 21 percent in the first half of the year to 11 percent in the second half (*Figure 2*). Since then, this share has never risen above 7 percent. While data are unavailable on a continuous basis before 1990, Shapiro (1977) reports that the average annual share of commitments going to below-investment-grade bonds between 1960 and 1975 was 19.9 percent. In other words, starting in mid-1990, there was a historically unprecedented shift in insurers' investments away from below-investment-grade private bonds.

Consistent with the reduced rate of purchase of below-investment-grade bonds, life insurance companies' holdings of these securities fell 11 percent in 1991, whereas holdings of investment-grade securities rose by nearly 12 percent. As a result, as shown in Table 3, below-investment-grade private bonds as a percentage of all private placements in insurance company portfolios declined from 19.8 percent in 1990 to 12 percent in 1993 (and to 10 percent by year-end 1995). As private bonds are infrequently sold in the secondary market, this sharp decline in outstandings is consistent with an abrupt cessation of new investments in below-investment-grade private bonds. Life insurance companies appear to have simply let their portfolios of such bonds run off without replacing them. Table 3 illustrates that this aversion also

**Figure 3**  
Yield Spreads on Privately Placed  
Corporate Bonds, 1990–96



NOTE: Spreads are quarterly-weighted average spreads over the 7-year Treasury bond.

SOURCE: American Council of Life Insurance.

extended to the public market in the early 1990s—holdings of below-investment-grade public bonds as a share of total public bonds fell from 6.8 percent in 1990 to 3.7 percent in 1992.<sup>14</sup>

Accompanying the decline in issuance and outstandings was a sharp increase in yield spreads on below-investment-grade private bonds. According to market reports, before 1990 the difference in yields on BB- and BBB-rated private bonds with comparable terms was about 100 basis points; since then, the difference has been as high as 250 basis points.<sup>15</sup> Although data are unavailable before 1990, the spreads reported in the ACLI survey confirm this movement (*Figures 3 and 4*).<sup>16</sup> During the first half of 1990, the spread between yields on BB-rated private placements and comparable Treasury securities was just over 300 basis points, compared with just over 200 basis points for BBB-rated privates. This implies a difference in yields between BB- and BBB-rated bonds of about 100 basis points, consistent with market reports of the “normal” spread between such bonds at the end of the 1980s. During 1991–93, however, the spread over Treasuries on BB-rated privates rose sharply to around 350 basis points (peaking at 425 basis points in early 1991), while the spread over Treasuries on BBB-rated privates actually fell somewhat.<sup>17</sup> The yield spread between BBB- and BB-rated bonds thus rose to between 130 and 220 basis points over this period. Note again that spreads between BB- and BBB-rated private bonds remained between 180 and 200 basis points through 1995 and 1996.

Of course, one could argue that the increase in spreads over Treasuries for BB-rated private bonds in late 1990 and 1991 largely resulted from the slowdown in economic activity. The recession could have increased borrower riskiness, and life insurers could have demanded higher interest rates in response. However, such an argument does not account for the fact that spreads over Treasuries on investment-grade private bonds actually *declined* in the recession, as shown in Figure 3. This pattern of behavior is *not* observed in the previous recession, when spreads over Treasuries of investment-grade bonds rose, and in fact rose by a greater amount than spreads on below-investment-grade bonds.<sup>18</sup> This argument would also fail to account for the continuing high spreads on BB-rated securities during the expansion that followed the 1990–91 recession. Overall, it appears more likely that, within the below-investment-grade sector of the private placement market, for a given level of risk, loan prices went up, whereas the volume of loans went down. These facts are consistent with a credit crunch in this market.

#### Mechanisms behind the credit crunch

The mechanism behind the credit crunch in the private placement market is somewhat different from those that have been proposed in the research literature. This section briefly reviews the literature on credit crunches and contrasts it with the mechanism that I argue is behind the recent credit crunch in the private placement market.

One branch of the literature on credit crunches focuses on reductions in intermediaries’ lending activity caused by regulatory

**Figure 4**  
Difference Between BB Spread and  
BBB Spread, 1990–96



SOURCE: American Council of Life Insurance.

actions that affect lenders' ability or incentives to assume certain risks. For example, Bernanke and Lown (1991), Clair and Tucker (1993), Berger and Udell (1994), Peek and Rosengren (1995), and Brinkman and Horvitz (1995) examine the effect of overzealous bank examination and the imposition of risk-based capital requirements on banks as a reason for the slowing of bank lending in the early 1990s. Banks facing binding capital constraints as a result of large loan losses, low earnings, and the introduction of higher regulatory requirements for capital levels had three options for increasing their capital-asset ratios: raise new capital, shrink assets and thereby liabilities, or change the mix of assets to include more government securities and fewer loans to businesses.<sup>19</sup> The latter two choices involve cutting back lending to borrowers. More aggressive examination practices that forced banks to make excessive charges against capital and accept new credit risks more cautiously would have a similar effect.

Another branch of the literature focuses on a decline in indebted firms' net worth and the value of their unencumbered collateral as a reason for a contraction in financial intermediary lending. Bernanke and Gertler (1989) suggest that borrowers' net worth can affect lending activity by financial intermediaries. As borrower net worth declines, then the agency costs of external finance rise. Thus lenders will be increasingly unwilling to lend to firms as their net worth declines. Shocks that impact firm net worth negatively can thus produce credit crunches.<sup>20</sup>

A third branch of the literature focuses on contractions of lending by intermediaries caused by liquidity problems, as modeled by Diamond and Dybvig (1983). In their model, a bank transforms illiquid assets into liquid deposits. Although bank assets are riskless, there is a cost to turning them liquid. Thus a bank run can still occur if depositors conjecture that all other depositors will withdraw their deposits early and consequently run to the bank to close their accounts before the bank exhausts its assets. Since the bank's assets are riskless, however, runs are not caused by rumors about the bank's solvency. Instead, runs arise as a random phenomenon, like sunspots. However it is caused, the effect of a run is the same—the bank must liquidate its illiquid loans and contract lending activity.

A final branch of the literature focuses on contractions in intermediaries' lending caused by runs due to liabilityholder concerns about financial intermediaries' solvency. Chari and

Jagannathan (1988) and Gorton and Calomiris (1991) model situations where bank assets are risky. Some depositors have private information about the value of the bank's assets, while others try to infer this information from the number of depositors who line up at the withdrawal window. If there is a long line, these depositors will (sometimes incorrectly) infer bad news about the value of the bank's assets and this will trigger a bank run, which in turn triggers a sharp contraction in bank lending.

As I argue in the next section, the mechanism behind the credit crunch in the private placement market was largely unrelated to the liquidity-based models of runs and was not associated with a decline of indebted firms' net worth or regulatory action.<sup>21</sup> It was most closely related to the last class of models, which focuses on runs caused by liabilityholder concerns about financial intermediaries' solvency. However, unlike in these models, no actual runs occurred to trigger a flight to quality by an insurance company: the mere threat that potential customers were focusing on an insurer's below-investment-grade bond holdings was enough to trigger a withdrawal from the market for these securities. Thus, the signal to liabilityholders provided by the length of the line at the withdrawal window was not crucial, because most life insurers did not experience runs. What was crucial was the perception that the share of below-investment-grade bonds on the insurer's books was impeding the ability to sell life insurance policies to potential customers and hurting the firm's stock price. The next section reviews the flight-to-quality mechanism behind the credit crunch.

### The flight-to-quality mechanism in the private placement market<sup>22</sup>

Until the early 1990s, the life insurance industry had enjoyed a long-standing reputation for financial stability. In 1990, however, concerns arose about the financial state of some life insurers when two insurance companies announced large write-downs of their bond and commercial real estate portfolios.<sup>23</sup> In 1991, five life insurance companies were seized by regulators.<sup>24</sup> Of these, two had large exposures to below-investment-grade bonds, and one had heavy exposures to commercial real estate.

In 1991, life insurers also became subject to more rigorous disclosure requirements with regard to their below-investment-grade holdings. In 1990, the National Association of Insurance Commissioners (NAIC) revised its system of rating bonds held by life insurance



Table 4  
NAIC Ratings

NAIC rating designation	Equivalent rating-agency designation
Old system	
Yes	AAA to B
No*	BB, B
No**	CCC or lower
No	In or near default
New system	
1	AAA to A
2	BBB
3	BB
4	B
5	CCC or lower
6	In or near default

SOURCE: Securities Valuation Office, National Association of Insurance Commissioners.

companies to more closely resemble those of the major credit rating agencies. As shown in Table 4, under the old rating system, bonds that would have been rated below-investment-grade by the major ratings services—BB or below—were often rated investment grade (a “Yes” rating) by the NAIC for regulatory purposes. A “Yes” rating under the old system could be given to securities rated from AAA to B, while a “No\*,” “No\*\*,” or “No” rating could be given to securities rated from BB to those in default. Under the new system, all bonds rated below-investment-grade by the major ratings agencies were rated below-investment-grade by the NAIC. NAIC-1, the top rating, was given to securities rated AAA to A, NAIC-2 to BBB securities, NAIC-3 to BB securities, and NAIC-4 to B securities.

The first balance sheet data (from 1990) incorporating the new ratings were released in spring 1991. Although life insurance company investments in below-investment-grade bonds had changed little from 1989, the new system made it look as if there had been a huge jump in life insurance company exposure to below-investment-grade bonds. From 1989 to 1990, reported below-investment-grade holdings of the life insurance industry rose 40 percent and, as a share of all corporate bond holdings, increased from 15 to 21 percent. The sudden appearance of larger below-investment-grade holdings by life insurance companies focused the attention of regulators, stock investors, the media, advisors to the institutional buyers of life insurance products, and policyholders themselves on the composition of insurers’ bond holdings. Below-investment-grade bonds became a source of concern for these con-

stituencies, with the ultimate result that insurance companies ceased investing in them.

Fenn and Cole (1994) document that stock prices of insurance companies with higher than average concentrations of junk bonds were adversely affected by the publicity surrounding First Executive’s write-down of its bond portfolio in early 1990.<sup>25</sup> In contrast, stock prices of insurance companies with lower than average exposure to below-investment-grade bonds were not affected.

The media also reacted unfavorably to those insurers with large holdings of below-investment-grade bonds. DeAngelo et al. (1994) suggest that First Executive—whose financial problems stemmed from overexposure to below-investment-grade bonds—received much more press coverage than other large life insurers with serious financial problems stemming from other reasons at the same time. They report that from July 1989 to April 1991, thirty-two feature articles on First Executive appeared in four major newspapers. Over the same period, there were only seven feature articles on any of the industry’s top ten companies, despite the fact that, during this period, other life insurers suffered substantial financial problems unrelated to their below-investment-grade bond investments.

Finally, potential customers of life insurance companies became sensitive to the share of below-investment-grade bonds held by insurers. Fenn (1995) finds evidence indicating that life insurance companies’ asset growth from 1990 to 1993 was extremely sensitive to their below-investment-grade holdings. Consistent with this finding, life insurance companies began to market themselves to policyholders on the basis of their below-investment-grade bond holdings. Insurers began to advertise explicitly their low exposure to below-investment-grade bonds in print and television media (see Lublin 1990).

Of course, much of this activity would have been warranted had below-investment-grade bonds truly been a serious problem for the life insurance industry. However, Fenn (1995) suggests they were not and that the use of below-investment-grade bond holdings as a signal of insurance company solvency problems was probably not warranted. First, below-investment-grade bonds were actually only a small factor in life insurers’ asset quality problems: none of the largest twenty life insurance companies had more than 10 percent of their general account assets in the form of below-investment-grade bonds. Far more serious was the industry’s sizable exposure to commercial real estate: in 1990, only two of the twenty

largest life insurers had less than 15 percent of their general account assets tied up in commercial real estate. In 1990, the largest twenty life insurance companies together held 31 percent of their general account assets in real estate, versus under 6 percent in (public and private) below-investment-grade bonds.<sup>26</sup>

Second, the slump in the commercial real estate market was longer and deeper than in the below-investment-grade market. Fenn (1995) reports that commercial real estate prices fell 24 percent between 1990 and 1992. In some regions of the country, prices fell by considerably more. In contrast, Fenn reports that public below-investment-grade bond prices fell 9 percent from 1989 to 1990 and then recovered sharply in 1991 and 1992. No data are available on prices in the private bond market because these bonds are rarely traded on the secondary market, but there is little evidence that default rates increased sharply in this period for private placement below-investment-grade issuers.

Regardless of whether the share of below-investment-grade bonds on an insurer's books was an accurate signal of its financial condition, there is evidence that the media, the stock market, and life insurance companies anticipated (correctly) that policyholders would be especially sensitive to this signal. The result was an almost complete withdrawal by life insurers from the below-investment-grade sector of the private placement market in 1991 and 1992.

#### Reasons for the persistence of the crunch.

One surprising aspect of the credit crunch is its persistence. Data on issuance and yield spreads in Tables 2 and 3 and Figures 2, 3, and 4 suggest that the credit crunch in the private market is an ongoing phenomenon six years after it started. This is in stark contrast to the public bond and bank loan markets, which revived as long ago as 1993 and are now very active markets for firms seeking funds. Why has the private placement market been special in this regard?

It is unlikely that insurance companies still feel the need to advertise low below-investment-grade bond exposure. Possibly this was true as late as 1993, but it is hard to believe that it is still the case. Concerns about life insurance company financial stability appear to have disappeared: the financial condition of the industry has improved significantly since 1992, and capital-asset ratios for the industry are at their highest level in almost a quarter of a century. In any case, life insurers appear no longer averse to investing in below-investment-grade *public* bonds. As illustrated in Table 4, over the last three years, insurance companies have in-

creased the share of their public bond investments going to below-investment-grade issues. At year-end 1995, the industry's 8.4 percent share was higher than it had been in 1990.

One reason may lie in the influence of risk-based capital standards, which became effective at the end of 1993 and which may have reinforced the reluctance of insurance companies to buy below-investment-grade securities. The new standards are aimed at measuring the prudential adequacy of insurers' capital as a means of distinguishing between weakly and strongly capitalized companies. To this end, insurers must report the ratios of their book capital to levels of capital that are adjusted for risk. As an insurer's ratio falls progressively below one, successively stronger regulatory actions are triggered. One way insurers can raise their risk-based capital ratios is to shift into lower risk assets, and below-investment-grade securities carry risk-weights much higher than those on investment-grade bonds and even commercial mortgages. While the introduction of risk-based capital standards may in part explain insurers' continued reluctance to invest in below-investment-grade private bonds, it is unlikely to be the whole story, since insurers have returned to the public below-investment-grade market, and the capital standards do not discriminate between private and public bonds.

The change in the composition of life insurers' assets between those held in general accounts and separate accounts may partly explain insurers' investment behavior. Insurers' separate account assets are held apart from their general account assets. All gains and losses of a separate account are directly attributed to the policyholders of that account. Separate account assets have grown much faster than general account assets since the early 1990s, when concern about insurers' financial stability first arose.<sup>27</sup> However, the shift from general to separate account products may have impeded the industry's traditional lending activities, since separate account assets must be marked-to-market and therefore consist primarily of liquid assets such as public bonds and publicly traded equities. Public below-investment-grade bonds are considered significantly more liquid than private below-investment-grade bonds and are thus more suitable assets for separate accounts.<sup>28</sup>

It is possible that the recent proliferation of below-investment-grade public bond investors has "cherry-picked" the better credits from the private market, thereby substantiating the

need for permanently higher spreads in the private market. However, as discussed above, the public and private bond markets are very different debt markets, and for many firms there is a limited scope for switching between them. Thus, this is unlikely to be the whole story for the persistence of high spreads and low insurer interest in this market.

A final reason has to do with the information-intensive nature of the private market for below-investment-grade issues and the high start-up costs facing many insurers that might consider getting back into the below-investment-grade sector of the private market. At the height of the credit crunch in 1991 and 1992, many life insurance companies scaled back substantially on their credit staffs, which are necessary for investing in the most information-problematic private bonds in the below-investment-grade sector. Many insurance companies may now be reluctant to incur the start-up costs associated with expanding their risk-control resources, particularly if they feel there is some likelihood of the same policyholder focus on below-investment-grade bond holdings when the next downturn in the industry occurs.<sup>29</sup>

## Conclusions

The credit crunch in the private placement market is an example of a flight-to-quality mechanism at work. Private placements are information-intensive securities that require substantial due diligence and monitoring by intermediaries in order to ascertain their value. They make up a substantial portion of life insurance company assets; these companies are therefore vulnerable to the flight-to-quality mechanism because, unlike banks, their liabilities are not insured. Financial problems at life insurance companies, a change in regulatory reporting requirements, and runs on a few insurers combined to raise doubts about the solvency of life insurance companies and focused regulatory, media, stock market, and public attention on the share of life insurance company assets in below-investment-grade bonds as a signal of solvency. Life insurance companies, therefore, began to compete with each other on the basis of this share. This created a large-scale withdrawal from the market for below-investment-grade bonds, creating a credit crunch in this segment of the private placement market. Ironically, it is likely that the share of below-investment-grade bonds on an insurer's books was not a very good signal of its solvency. But the information-intensive nature of the securi-

ties meant that outsiders could be misled in this regard.

The existence of a mechanism that could induce the credit crunch in the private placement market does have some more general implications. Flights to quality by U.S. commercial banks have been rare since the advent of deposit insurance. However, this might change if recent proposals for "narrow" banks are enacted. Under these proposals, banks would be split into two parts: a narrow bank that would be fully insured, provide payments system services, and invest only in Treasury securities; and a "broad" bank that would raise uninsured funds in the open market and invest in traditional bank loans. Although the payments system would be fully insured under this system, broad banks might be an unstable source of funds for firms as they would be subject to the kind of flight-to-quality mechanism I've described for life insurance companies. A fuller understanding of the role of deposit insurance in promoting stable financial intermediation is necessary before the welfare effects of narrow bank proposals can be fully analyzed.

## Notes

I thank Mark Carey and George Fenn for helpful discussions, and Ken Robinson and Harvey Rosenblum for comments on an earlier draft.

- <sup>1</sup> "Information-intensive" refers to the requirement that due diligence be performed by the lender at the time of loan origination and monitoring be done thereafter. "Information-problematic" borrowers are those that pose particularly severe information problems to lenders, which must consequently engage in costly due diligence and monitoring to evaluate and control the credit risk of the borrower.
- <sup>2</sup> Although I focus on the traditional market, the Rule 144A market has become quite significant, totaling almost 50 percent of gross issuance in 1995.
- <sup>3</sup> Of course, this implies that in terms of net new funds raised, the private market is even more important than the gross issuance numbers suggest.
- <sup>4</sup> Outstandings of public bonds are the sum of bonds rated by Moody's Investors Service and publicly issued medium-term notes. Private placements are estimated by subtracting the figure for public bonds from outstandings of all corporate bonds reported in the Flow of Funds accounts. Data for bank loans are from the Flow of Funds accounts.
- <sup>5</sup> Further, bank loans tend to have maintenance covenants, whereby the criteria set forth in the covenant must be met on a continuous basis (at the end of each quarter, for example), whereas private bonds tend to have incurrence covenants, whereby the

criteria must be met at the time of a prespecified event, such as an acquisition or the issuance of new debt. See Carey et al. (1993).

<sup>6</sup> Kwan and Carleton (1996) report that over half of a sample of private placements were renegotiated at least once, with most of the renegotiations occurring for loans in good standing.

<sup>7</sup> See American Council of Life Insurance (1996).

<sup>8</sup> This reflects both the general concentration of the life insurance industry—the twenty largest life insurers hold about 50 percent of total industry assets—and the fact that large lenders have an advantage in investing in private placements because their large investment volume allows them to participate continuously in the market, giving them up-to-date information on pricing.

<sup>9</sup> See also Carey et al. (1993) for a discussion of this phenomenon.

<sup>10</sup> This also contributed to a crunch in the public below-investment-grade market, where life insurance companies were also significant lenders (but not nearly so dominant as they were in the private market).

<sup>11</sup> This definition is similar to that of Bernanke and Lown (1991), who in their analysis of the credit crunch in the bank loan market in the early 1990s define a crunch as “a significant leftward shift in the supply of bank loans holding constant both the safe real interest rate and the quality of potential borrowers.”

<sup>12</sup> The decline of issuance may or may not have been achieved by nonprice rationing: I have no quantitative evidence either way. Interviews with market participants on this topic revealed mixed views.

<sup>13</sup> Gross issuance excludes offerings to finance employee stock ownership plans and restructurings. Underlying developments are more evident with their exclusion, as both were heavy in 1989 but fell off sharply in 1990 and 1991. Also excluded are Rule 144A offerings. Before 1990, ratings reflected the judgment of agents supplying information on the transactions they assisted. Thereafter, ratings assigned by the National Association of Insurance Commissioners are used.

<sup>14</sup> Note, however, that unlike in the private market, life insurance companies appear to have returned to buying below-investment-grade public bonds in recent years.

<sup>15</sup> See Carey et al. (1993). BBB-rated bonds are the lowest investment-grade rating category, while BB-rated bonds are the highest below-investment-grade rating category.

<sup>16</sup> Care must be used in comparing the reported spreads. Although they are transaction prices, they do not reflect a standardized security. As noted in the first section of the article, the nonprice terms of private placements can differ widely for bonds carrying the same credit rating, and the terms affect the yields. For example, at any given moment, the difference in spreads between the highest-risk BB-rated issue and

the lowest-risk BB-rated issue may be as much as 150 basis points. Under normal circumstances, averaging spreads within a rating category produces a representative spread for the rating. However, as most of the BB-rated bonds issued since mid-1990 probably were at the least-risky end of the BB risk range, the increase in the BB spread shown in Figures 3 and 4 probably understates the actual increase.

<sup>17</sup> Similarly, the spread on A-rated private bonds also declined during 1991–93.

<sup>18</sup> In the 1981–82 recession, spreads over the 7-year Treasury on A- and BBB-rated bonds rose by 60 and 52 basis points, respectively, over their level for the twelve months prior to the recession, while those on BB-rated bonds rose by 45 basis points. These spreads are for public bonds; data for private bonds are unavailable.

<sup>19</sup> Risk-based capital may be viewed as a regulatory tax that is higher on assets with higher risk-weights, encouraging substitution out of assets in the 100 percent risk category—such as commercial loans—and into assets in the zero risk category—such as Treasury securities.

<sup>20</sup> In this case, the phenomenon would not qualify as a credit crunch as I have defined it, since the risk of the borrower presumably increases as net worth declines.

<sup>21</sup> However, regulators were probably at least partly responsible for the flight to quality to the extent they promulgated bad news to the public about below-investment-grade bonds.

<sup>22</sup> Much of the information in this section is from Fenn (1995).

<sup>23</sup> First Executive wrote down its bond portfolio by \$515 million in January; in October, Travelers reserved \$650 million for anticipated commercial real estate losses.

<sup>24</sup> The five were Executive Life and Executive Life of New York (both insurance subsidiaries of First Executive), First Capital and Fidelity Bankers (insurance subsidiaries of First Capital Corp.), and Mutual Benefit.

<sup>25</sup> Although they document that insurance company stock prices also fell in response to Travelers' announcement of \$650 million in commercial real estate losses, the price declines were only about one-quarter the size (per unit of investment in below-investment-grade bonds or commercial real estate).

<sup>26</sup> Rating agencies downgraded more than half of rated life insurance companies in 1991 and 1992, mostly for reasons of commercial real estate exposure.

<sup>27</sup> This is primarily because separate account policyholders have a preferred claim on separate account assets and are therefore afforded greater protection if an insurer defaults.

<sup>28</sup> This of course has implications for how banks might behave if forced to implement market-value accounting for their assets. In such circumstances, illiquid commercial loans would be viewed as more costly relative to liquid Treasury securities.

<sup>29</sup> The fact that other potential investors in below-investment-grade private placements—such as pension funds and finance companies—have not dramatically expanded their role as lenders to take advantage of the high spreads is evidence that there are likely to be high start-up costs to entering this market.

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